

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use “not applicable” or “does not apply” only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS \(part D\)](#). Please completely answer all questions that apply and note that the words “project,” “applicant,” and “property or site” should be read as “proposal,” “proponent,” and “affected geographic area,” respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [\[HELP\]](#)

1. Name of proposed project, if applicable:

Proposed Ordinance 2023-0263 - Battery Energy Storage System (BESS) Regulations

2. Name of applicant:

The proposal was initiated by King County.

3. Address and phone number of applicant and contact person:

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4. Date checklist prepared:

August 30, 2023

5. Agency requesting checklist:

King County.

6. Proposed timing or schedule (including phasing, if applicable):

The King County Council anticipates possible action on the proposed ordinance in the fourth quarter of 2023.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

There are no known plans to add or expand the proposed ordinance in the future.

If adopted, King County anticipates permit applications for individual developments that will be subject to the proposed regulations.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

- SEPA checklist for this proposal

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

The proposal is a nonproject action and applies to all of unincorporated King County. Permit applications for individual developments are pending for projects on properties within unincorporated King County, where the

proposed ordinance would apply. An application for a BESS has been received for parcel number 2422059059, near the City of Covington. That project is currently in permit review with the Department of Local Services, Permitting Division.

King County maintains a list of pending applications online at <https://aca-prod.accela.com/kingco/Default.aspx>.

10. List any government approvals or permits that will be needed for your proposal, if known.

Approval by the King County Council is the only government approval required for adoption of the proposed ordinance. Individual development projects that would be subject to the proposed ordinance would also be subject to all applicable federal, state and local permitting and licensing requirements.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Presently, Battery Energy Storage Systems (BESS) are not specifically named as a use in King County Code (K.C.C) Title 21A. These systems are understood to fall under the definition of “utility facility,” as they meet the definition for utility facility as a facility for the distribution or transmission of electric services. Under the current code, utility facilities such as BESS are a permitted use, without any additional zoning conditions or land use permits required.

The proposed ordinance would:

- Define “BESS” and “Consumer-scale BESS” as distinct uses in K.C.C. Title 21A, with consumer-scale BESS being used only for storage of energy to be used on-site.
- Allow Consumer-scale BESS as an accessory use to a residential, commercial/industrial, or resource use.
- Make BESS a permitted use in all zones except R zones, where they would be a conditional use.
- Limit the size of BESS in A and F zones to 2 acres or 2.5% of the site, whichever is less.
- Subject BESS to the requirements for nonresidential land uses in the RA, UR, or R zones.
- Require all BESS, as well as Consumer-scale BESS over 1 megawatt (MW), to maintain a buffer from vegetation and be separated from vehicle-accessible areas by barriers.
- Require privately owned¹ BESS over 1 MW and privately owned Consumer-scale BESS over 1 MW to demonstrate financial responsibility for explosion and decommissioning, to be verified every five years.
- Specify that BESS and consumer-scale BESS cannot project into setbacks, something that is allowed for other electrical equipment.
- Specify that BESS constitute utility development the purposes of landscaping requirements.

Compliance with existing federal, state, and local regulations is presumed for purposes of this SEPA checklist, including compliance with the regulations in the proposed ordinance itself, as well as others such as those related to drinking water, stormwater, wastewater treatment, septic systems, critical areas, and zoning requirements. Any noncompliant uses or structures would be subject to code enforcement and would not be considered an impact related to the proposed ordinance.

The King County Council could modify the proposed ordinance and still accomplish the proposal’s objective. Depending on the modification, the likelihood, scale, or scope of potential impacts to various elements of the environment could be the same, greater, or less. Potential modifications to the ordinance include:

- Disallowing BESS in one or more zones;
- Requiring a conditional use permit or special use permit for BESS in one or more zones;

¹ State law prohibits the County from imposing this requirement on public agencies.

- Requiring separation between BESS and certain other uses;
- Requiring increased setbacks from property lines;
- Requiring increased separation between individual cabinets or containers housing BESS or Consumer-scale BESS;
- Requiring noise mitigation measures;
- Adding further requirements relating to fire, explosion, or hazardous substance release;
- Changing the threshold at which financial responsibility is required;
- Limiting the applicability of financial responsibility requirements and other zoning provisions to certain battery technologies;
- Adding further design standards for BESS and/or Consumer-scale BESS;
- Adding regulations specific to BESS used in microgrid applications.

As would be the case for any nonproject or project action that undergoes changes after the publication of a SEPA threshold determination, the King County Executive branch, which pursuant to K.C.C. 20.44.020 is the Lead Agency for SEPA for King County, would evaluate any modifications that are proposed to be made to the proposed ordinance and would update this environmental review in the case that changes would result in greater or different impacts than those identified in this checklist. The timing of additional environmental review process may vary depending on other variables, including future public processes.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The proposed ordinance is a nonproject action that would apply to all of unincorporated King County, which totals 1,095,680 acres.

In general, King County is located in western Washington and includes 39 incorporated cities, including Seattle, Federal Way, Kirkland, and Bellevue. Approximately three-quarters of the County is unincorporated and includes areas primarily to the east of the County urban growth area boundary and the urban Puget Sound region, with the exception of Vashon-Maury Island located to the west and some isolated blocks of unincorporated area within the urban growth area.

Nearly 75 percent of unincorporated King County is zoned as Forest (F), particularly the eastern portion of the County. To the west, near the more urban incorporated areas of the County, the predominant zoning category is RA, with some areas zoned A, particularly in the area northeast of Sammamish Valley and the area northwest of Enumclaw. Smaller areas of residential, business, office, and industrial zoning are also located throughout unincorporated King County.

B. Environmental Elements [\[HELP\]](#)

1. Earth [\[help\]](#)

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

Although the proposed ordinance is a nonproject action with no identifiable “site,” the ordinance applies to all of unincorporated King County, which includes areas that are flat, rolling, hilly, and steep slope. King County

landforms include saltwater coastline, river floodplains, plateaus, slopes, and mountains, punctuated with lakes and streams. The proposed ordinance would apply to King County projects on lands with these features.

b. What is the steepest slope on the site (approximate percent slope)?

Although the proposed ordinance is a nonproject action with no specific site or location, unincorporated King County includes 16,596 acres of steep slope critical areas. It is possible there may be steep slopes on properties where a BESS or Consumer-scale BESS is permitted. Any BESS or Consumer-Scale BESS located on a parcel where steep slope is located would be subject to existing regulations and, for new development proposals, would be identified and addressed under existing regulations during permit review.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Although the proposed ordinance is a nonproject action with no specific site or location, soil in unincorporated King County generally reflects geologically recent glacial and alluvial (river and stream) activity, as well as human activity. River valleys are generally occupied by poorly drained, silty loams that commonly have a substantial organic content. Soils on upland areas between valleys typically are coarser-grained sandy and gravelly sandy loams, but soils with high organic content do occur locally in these upland areas and along water bodies. Some areas of unincorporated King County are classified as farmland of statewide importance, prime farmland, and prime farmland with conditions (which means that it is prime farmland if drained, irrigated, protected from flooding, or not frequently flooded). King County's Farmland Preservation Program restricts use on participating properties to agriculture or open space use and restricts activities that would impair the agricultural capability of the property.

In accordance with the State Growth Management Act (RCW 36.70A.170 and 36.70A.050), King County designated "agricultural lands that are not already characterized by urban growth and that have long-term significance for the commercial production of food or other products." The lands that meet these criteria are designated as an Agricultural Production District, of which there are five in King County (Enumclaw, Snoqualmie, Upper Green River, Lower Green River, and Sammamish).

Proposed ordinance section 9, modifying King County Code (K.C.C.) 21A.08.100, would allow BESS on A (agriculture) zoned properties. However, existing regulations regarding the soils, and other limitations on square footage and impervious surfaces, are unaltered by the proposed ordinance, and would limit resulting soil removal from development. Additionally, the proposed ordinance includes limits on the size of BESS in A zones, something not currently in place for utility facilities in A zones.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Although the proposed ordinance is a nonproject action with no specific site or location, geologically hazardous areas, including landslide and erosion-prone areas, some abandoned mining areas, and seismic risk areas, exist within unincorporated King County. Landslide and erosion-prone areas are associated primarily with steep slopes. Hazardous mining areas that may be subject to surface subsidence are associated primarily with past coal mining that occurred in the area from Newcastle through Renton south to Black Diamond. Any development subject to the proposed ordinance that is located on a parcel where landslide or erosion-prone areas exist would be subject to existing regulations and, for new uses, would be identified and addressed under existing regulations during permit review.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Although the proposed ordinance is a nonproject action that would not directly authorize any fill, excavation, or grading, individual projects subject to the proposed ordinance could include fill, excavation, or grading. All such development projects would continue to be subject to existing development regulations related to stormwater management, impervious surfaces, critical areas, clearing and grading, and/or landscaping. Unless exempt under state and county requirements, filling, excavation and grading is also subject to SEPA review.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Although the proposed ordinance would not direct any development activities, potential erosion can result from clearing, construction or use of land for development that is subject to the proposed ordinance. The proposed ordinance does not amend existing regulations on clearing, grading, or construction that could cause erosion. For example, the King County Surface Water Design Manual and shorelines and critical areas regulations, would be unchanged by the proposed ordinance, and would continue to apply to development projects subject to the proposed ordinance.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The proposed ordinance would not have any direct impacts to impervious surface percentages. However, development projects subject to the proposed ordinance would be subject to new regulations on impervious surface maximums. Currently, BESS are considered to be a type of utility facility, which are subject to the standard impervious surface maximums for whatever zone in which they are located. Section 11 of the proposed ordinance would change this by subjecting BESS (but not Consumer-scale BESS) to the requirements in K.C.C. 21A.12.220 for nonresidential land uses in the RA, UR, or R zones. The table below shows the impervious surface maximums in these zones under the current code and under the proposed ordinance:

Zone	Current Code	Proposed Ordinance
RA 2.5	25%	40%
RA-5	20%	40%
RA-10	15%	40%
UR	30%	70%
R-1	30%	70%
R-4	55%	70%
R-6	70%	70%
R-8	75%	70%
R-12	85%	80%
R-18	85%	80%
R-24	85%	80%
R-48	90%	80%

Compared to current code, BESS would have a higher impervious surface maximum in the RA, UR, and R-1 through R-4 zones, and a lower impervious surface maximum in the R-8 through R-48 zones. The impervious surface maximum in the R-6 zone would remain the same.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Because the proposed ordinance is a nonproject action that would not have any direct impacts, no measures to control erosion or other impacts to the earth are proposed. King County’s existing regulations related to erosion and soils would apply to any development to which the proposed ordinance would apply. Unless exempt under state and

county requirements, projects proposing development that would add impervious surfaces would also be subject to SEPA review.

2. Air [\[help\]](#)

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

The proposed ordinance is a nonproject action that would not result in any direct emissions to the air. Projects subject to the proposed ordinance may result in air emissions from construction and operation activities, as well as from the manufacture and transport of batteries used in the project and their eventual disposal. These emissions would be subject to existing federal, state, and local regulations for these types of emissions. The proposed ordinance would not modify any federal, state, or local codes that provide standards or controls for these types of emissions.

As BESS are frequently used to facilitate the provision of renewable energy, the use of BESS may contribute to lower emissions from electricity supply. Since the proposed ordinance imposes new restrictions and requirements on BESS, the proposed ordinance might slow or discourage the development of BESS in unincorporated King County and therefore could potentially hinder efforts to reduce emissions from electricity supply. Alternatively, the provision of clear standards for BESS could make the permitting process more understandable and predictable for applicants who construct them, facilitating their placement and easing the state's planned transition to renewable energy. It is unknown how these two factors might balance out in practice.

Though rare, there have been several reported incidents of equipment malfunction at BESS facilities in which fires and/or explosions have occurred. Such incidents have resulted in air emissions of hazardous substances. Discussion of the potential discharge of hazardous waste material into the air can be found in Section 7 and Part D of this checklist.

Air emissions are discussed in more detail in Part D of this checklist.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

The proposed ordinance is a nonproject action that would not be affected by off-site sources of emissions or odor, and no known off-site sources of emissions or odor are likely to impact implementation of the proposed ordinance.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

The proposed ordinance is a nonproject action and would not have any direct impacts to air emissions, and the development projects to which it would apply would be subject to existing regulations regarding emissions and reporting requirements. Additional federal, state, and local codes might provide standards and controls for these types of emissions and would not be modified by the proposed ordinance.

In addition to these existing requirements, the proposed ordinance would require all privately owned BESS and consumer-scale BESS with over 1 MW capacity to obtain financial responsibility (e.g., insurance) to cover for the maximum damages that might occur from an explosion resulting from a worst-case release, as defined in the 40 C.F.R. Sec. 68.3, of flammable gases and flammable liquids. These facilities would be subject to the same financial responsibility standards as privately owned fossil fuel facilities and nonhydroelectric generation facilities in unincorporated King County.

3. Water [\[help\]](#)

a. Surface Water: [\[help\]](#)

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Although the proposed ordinance is a nonproject action with no specific site or location, numerous streams, lakes, ponds, and wetlands and the Puget Sound are located within unincorporated King County. King County maintains an inventory of water bodies within unincorporated King County, which would be considered during development review.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

The proposed ordinance is a nonproject action that would not directly require any work over, in, or adjacent to the described waters. State and local shoreline regulations would apply to any development subject to the proposed ordinance that is within 200 feet of waters within unincorporated King County's shoreline jurisdiction (60,451 acres in total countywide). Other development regulations, including critical areas regulations, concerning the protection of waterbodies may also apply depending on the proximity of any development to these waters.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

The proposed ordinance is a nonproject action that would not authorize filling or dredging from surface water or wetlands. Individual development projects subject to the proposed ordinance would also be subject to all state, local, and federal regulations, including mitigation requirements, concerning fill or dredge material placed in or removed from surface water or wetlands.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

The proposed ordinance is a nonproject action that would not require any surface water withdrawals or diversions. Individual development projects subject to the proposed ordinance would also be subject to existing regulations concerning surface water diversions and withdrawals, including those regarding in-stream flows, if applicable.

BESS generally do not use water as part of their operations, though some BESS facilities might have cooling systems that use water.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

Although the proposed ordinance is a nonproject action with no specific site or location, several areas of unincorporated King County lie within a 100-year floodplain. Development projects subject to the proposed ordinance would also be subject to King County rules and limitations pertaining to floodplain development and fill.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The proposed ordinance is a nonproject action that would not directly involve any discharges of waste materials to surface waters. Development projects subject to the proposed ordinance would also be subject to existing state, local, and federal regulations concerning the protection of and discharge of waste materials to surface waters, including state regulations on water usage, wastewater disposal, and state antidegradation standards. Discharges to surface waters are discussed in more detail in Section 7 and Part D of this checklist.

b. Ground Water: [\[help\]](#)

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.**

The proposed ordinance is a nonproject action and would not directly involve any withdrawals of groundwater or discharge to groundwater. Development projects subject to the proposed ordinance that use groundwater or discharge to groundwater would be subject to all existing state, local, and federal regulations concerning groundwater removal and protection.

BESS generally do not use water as part of their operations, though some BESS facilities might have cooling systems that use water.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

Although the proposed ordinance is a nonproject action that would not result in any discharge of waste material into the ground, individual BESS facilities may discharge waste material from septic tanks or other sources. However, because BESS are generally unstaffed facilities, the amount of waste discharged to a septic system would likely be far lower than at other residential or commercial uses that are occupied on a daily basis.

Discussion of the potential discharge of hazardous waste material during an equipment failure at BESS facility can be found in Part D of this checklist.

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

The proposed ordinance is a nonproject action that would not directly generate or affect water runoff. Individual BESS projects subject to the proposed ordinance may generate some water runoff. As noted above, the proposed ordinance would make BESS subject to the impervious surface maximums for nonresidential land uses in the RA, UR, or R zones, whereas currently, as a subset of utility facilities, they are subject to the standard maximum for each zone. This change raises, lowers, or has no effect on the potential maximum impervious surface, depending on the zone. Regardless, as with any development in unincorporated King County, on-site stormwater management would need to comply with the King County Surface Water Design Manual, including applicable Best Management Practices (BMPs) for treatment and flow prior to discharge.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.**

The proposed ordinance is a nonproject action that would not directly result in any waste material entering ground or surface waters. Development projects subject to the proposed ordinance may result in waste matter that could enter ground or surface waters, but such projects would be subject to existing state, local, and federal regulations concerning the protection of surface and ground water. Discussion of the potential discharge of hazardous waste material can be found in Section 7 and Part D of this checklist.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The proposed ordinance is a nonproject action with no specific site or location, and would not alter or otherwise affect drainage patterns. Development projects subject to the proposed ordinance would also be subject to existing drainage regulations, which are unchanged by the subject ordinance.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

The proposed ordinance is a nonproject action that would not have any direct impacts to surface or ground water, runoff water, or drainage patterns. Existing federal, state, and local regulations related to surface water discharge and withdrawal, groundwater discharge and withdrawal, runoff water (stormwater), and drainage would apply to any development project that would be subject to the proposed ordinance.

In addition to these existing requirements, the proposed ordinance would require all privately owned BESS and consumer-scale BESS with over 1 MW capacity to obtain financial responsibility (e.g., insurance) to cover for the maximum damages that might occur from an explosion resulting from a worst-case release, as defined in the 40 C.F.R. Sec. 68.3, of flammable gases and flammable liquids. They would also be required to carry financial responsibility for decommissioning, including cleanup of any hazardous substances. These facilities would be subject to the same financial responsibility standards as privately owned fossil fuel facilities and nonhydroelectric generation facilities in unincorporated King County.

4. Plants [\[help\]](#)

a. Check the types of vegetation found on the site:

- deciduous tree: alder, maple, aspen, other
- evergreen tree: fir, cedar, pine, other
- shrubs
- grass
- pasture
- crop or grain
- Orchards, vineyards or other permanent crops.
- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- water plants: water lily, eelgrass, milfoil, other
- other types of vegetation

Although the proposed ordinance is a nonproject action with no specific site or location, unincorporated King County includes a variety of vegetation types on the various lands that development projects subject to the proposed ordinance would apply to, including those listed above. Lands within King County include three ecoregions: the Puget Lowland Ecoregion in the western half of the County, which is now largely urbanized, but which contains forest plantations, farms, and cottonwood; and the North Cascades Ecoregion in the northeastern and east central area and the Cascades Ecoregion in the southeastern portion of the County, which both contain Pacific Silver Fir, Alaskan cedar, Mountain hemlock, Subalpine fir, black sedge, mountain heliotrope, and Alaskan spirea.

b. What kind and amount of vegetation will be removed or altered?

Although the proposed ordinance is a nonproject action that would not directly remove any vegetation, the development of individual development projects subject to the proposed ordinance could include the removal or alteration of vegetation (potentially of the types identified in question 4.a). Such development projects would be

subject to existing state and local regulations that regulate vegetation removal or alteration, in the same manner as other uses.

Additionally, Sections 6, 7, 8, and 9 of the proposed ordinance would require all BESS, and Consumer-scale BESS with 1 MW or more of capacity, to maintain a ten-foot clearance between any landscaping or vegetation and structures. This would require more vegetation removal than is the case under current regulations. However, it is likely that ten feet surrounding a BESS facility would be cleared for construction purposes regardless of this requirement, so this requirement may reduce the amount of vegetation being replaced rather than increasing the amount of vegetation being removed.

c. List threatened and endangered species known to be on or near the site.

The United States Fish and Wildlife Service lists the following endangered or threatened plant species in Washington state: golden paintbrush, Kincaid's Lupine, Marsh Sandwort, Nelson's checker-mallow, Showy stickseed, Spalding's Catchfly, Umtanum desert buckwheat, Ute ladies'-tresses, Wenatchee Mountains checkermallow, White Bluffs bladderpod. The Wenatchee Mountains checkermallow is known to be in eastern King County; none of these other plant species are known to be located in King County.

The proposed ordinance is a nonproject action with no specific site or location. Development projects subject to the proposed ordinance will be required to meet all federal, state, and local laws regarding endangered or threatened plant species.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Although the proposed ordinance is a nonproject action with no specific site or location, landscaping, use of native plants, or other measures to preserve or enhance vegetation could be proposed for individual developments. As with any development in unincorporated King County, development projects subject to the proposed ordinance would be subject to existing regulations governing landscaping, use of native plants, and vegetation preservation on their respective sites, as well as the nonvegetated buffer discussed in subsection 4.b. above.

e. List all noxious weeds and invasive species known to be on or near the site.

The King County Noxious Weed Program regulates invasive plant species, and requires eradication or control, or recommends control, for over 150 plant species. Class A noxious weeds, adopted in accordance with RCW 17.10 and WAC 16-750, that are known to or have been located in King County, and require eradication by property owners, include Common Cordgrass, Dyers Woad, Eggleaf Spurge, False Brome, Floating Primrose-Willow, French Broom, Garlic Mustard, Giant Hogweed, Goastrue, Hydrilla, Bighead Knapweed, Reed Sweetgrass, Ricefield Bulrush, Clary Sage, Small-Flowered Jewelweed, Spanish Broom, and Milk Thistle. Class B noxious weeds, that are known to have been located in King County, and require control by property owners, include Viper's Bugloss Blueweed, Annual Bugloss, Common Bugloss, Common Reed, Dalmation Toadflax, Brazilian Elodea Egeria, European Coltsfoot, Gorse, Hairy Willowherb, Hawkweeds (Non-native species and hybrids of meadow subgenus), European Hawkweed, Orange Hawkweed, Houndstongue, Brown Knapweed, Diffuse Knapweed, Meadow Knapweed, Spotted Knapweed, Kochia, Garden Loosestrife, Purple Loosestrife, Parrotfeather, Perennial Pepperweed, Poison-Hemlock, Policeman's Helmet, Rush Skeltonweed, Saltcedar, Shiny Geranium, Leafy Spurge, Yellow Starthistle, Sulfur Cinquefoil, Tansy Ragwort, Musk Thistle, Scotch Thistle, Velvetleaf, Water Primrose, Wild Chervil, Yellow Floatingheart, and Yellow Nutsedge.

Although the proposed ordinance is a nonproject action with no specific site or location, a variety of noxious weeds and invasive species exist in unincorporated King County. The proposed ordinance does not change any obligations to control noxious weeds identified by the King County Noxious Weed Control Board.

5. Animals [\[help\]](#)

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other

Although the proposed ordinance is a nonproject action with no specific site or location, a variety of birds, mammals, and fish have been observed in unincorporated King County. There are 221 bird species that are common, uncommon or usually seen on an annual basis in King County. Bird species include hawks, herons, eagles, owls, woodpeckers, songbirds, waterfowl, and shorebirds. There are 70 mammal species that can be found in King County, including shrews, bats, beavers, elk, deer, bears, rabbits, wolves, seals, and whales. There are 50 species of freshwater fish in King County, including 20 introduced species. More information on birds and animals found in King County can be found at <https://kingcounty.gov/services/environment/animals-and-plants/biodiversity/defining-biodiversity/species-of-interest.aspx>.

b. List any threatened and endangered species known to be on or near the site.

Although the proposed ordinance is a nonproject action with no specific site or location, there are a number of federally threatened and endangered species in King County according to the U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration. These species include the Marbled murrelet, Northern spotted owl, Streaked horned lark, Yellow-billed cuckoo, Bull Trout, Taylor's Checkerspot, Canada lynx, Gray wolf, Blue whale, Fin whale, Humpback whale, Southern resident killer whale, Oregon spotted frog, Sei whale, Sperm whale, Bocaccio rockfish, and yelloweye rockfish. One additional species, Grizzly bear, was historically in King County but is thought to now be extinct in this area.

The Washington State Department of Fish and Wildlife lists the following salmonid species as those federally threatened that are known to occur in King County. Skykomish Bull Trout, White River (Puyallup) Bull Trout, Cedar Chinook, Green River (Duwamish) Chinook, Sammamish Chinook, Snoqualmie Chinook, White River Chinook, Cedar River Winter Steelhead, Green River (Duwamish) Winter Steelhead, North Lake Washington and Lake Sammamish Winter Steelhead, Snoqualmie Winter Steelhead, Tolt Summer Steelhead, and White River (Puyallup) Winter Steelhead.

In addition to the federally listed species above, the Washington State Department of Fish and Wildlife lists additional threatened and endangered species not included with the federally listed species include the Western gray squirrel, Northwestern pond turtle, and Oregon vesper sparrow. One additional species, fisher, was historically in King County but is thought to now be extinct in this area.

As with any development in unincorporated King County, development projects subject to the proposed ordinance would have to comply with existing state, local, and federal regulations that protect these species.

c. Is the site part of a migration route? If so, explain.

Although the proposed ordinance is a nonproject action with no identifiable "site," King County is within the Pacific Flyway migratory pathway for birds, and migratory birds use water bodies, shorelines, mud flats, and grassy areas/meadows throughout King County. There are numerous streams and water bodies within the County that serve as migration routes for anadromous fish. These water bodies could potentially be near or cross through sites where development projects are proposed that could be subject to the proposed ordinance. Elk, other mammals, and bird species migrate seasonally. Daily movements include animal species moving around to get their daily needs met, and this movement can be impacted by fences, roads, culverts, and land use cover and change. Mammals, amphibians, and reptiles are most affected by barriers to movement.

d. Proposed measures to preserve or enhance wildlife, if any:

The proposed ordinance is a nonproject action and would not have any direct impacts to wildlife, so no measures to preserve or enhance wildlife are proposed. Any development projects that would be subject to proposed ordinance would also be subject to existing federal, state, and local wildlife regulations.

e. List any invasive animal species known to be on or near the site.

The Washington Invasive Species Council, established by the Washington State Legislature, has identified 16 animal species and 13 insect species that are considered invasive in Washington State. King County is known or suspected to have the following invasive animal and insect species: Apple Maggot, Brown Marmorated Stink Bugs, European Chafer, Gypsy Moth, Scarlet Lily Beetles, Spotted Winged Drosophila, African Clawed Frog, Bullfrog, Invasive Crayfish, Invasive Copepods, New Zealand Mud Snail, Northern Pike, Nutria, Tunicate (*iona savignyi*, *styela clava*, and *didemnum*).

Although the proposed ordinance is a nonproject action with no specific site or location, numerous invasive animal species are known to exist in unincorporated King County. Invasive species may be located on a development project site that could be subject to the proposed ordinance.

6. Energy and Natural Resources [\[help\]](#)

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

The proposed ordinance is a nonproject action that would not have direct energy needs. Although the purpose of a BESS is to store electricity for use elsewhere, BESS themselves do consume a portion of the energy that flows into the system from the initial energy source.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Although the proposed ordinance is a nonproject action that would not have any direct impacts to the use of solar energy, implementation of the proposed ordinance in individual development projects may affect the potential use of solar energy by adjacent properties either positively or negatively. As discussed above, BESS are often used to facilitate the use of solar energy. Placement of a BESS facility might increase the feasibility of solar energy generation systems on nearby properties by providing storage capacity to this naturally fluctuating resource. Because the proposed ordinance would impose new zoning and financial responsibility requirements on BESS compared to the existing code, it could slow or discourage the development of BESS and therefore could potentially make nearby solar projects less feasible. Alternatively, the provision of clear standards for BESS could make the permitting process more understandable and predictable for applicants who wish to construct them, facilitating their placement and easing the state's planned transition to renewable energy. It is unknown how these two factors might balance out in practice.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

The proposed ordinance is a nonproject action that would not have any direct impacts to energy use. Individual BESS projects may help conserve energy through time-shifting renewable energy, peak shaving, or grid stabilization, which are discussed further in Part D of this checklist, and provide understandable and predictable regulations for BESS that may contribute to energy conservation.

7. Environmental Health [\[help\]](#)

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.**

Although the proposed ordinance is a nonproject action that would not directly cause any environmental health hazards, it is possible that development projects subject to the proposed ordinance could result in exposure to toxic chemicals, risk of fire and explosion, spills, or hazardous waste, primarily associated with the potential failure of batteries.

This topic is discussed in more detail in Section D of this checklist.

1) Describe any known or possible contamination at the site from present or past uses.

The proposed ordinance is a nonproject action with no specific site or location. Sites with contamination exist within unincorporated King County where development projects could be proposed that are subject to the proposed ordinance. These sites would be required to meet any remediation requirements prior to grading.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

The proposed ordinance is a nonproject action with no specific site or location. Sites with hazardous chemicals/conditions exist within unincorporated King County and development could be proposed on them that is subject to the proposed ordinance. Such development would be subject to existing federal, state, and local regulations regarding chemical hazards and liquid and gas transmission pipelines.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Although the proposed ordinance is a nonproject action that would not include the storage, use, or production of any toxic or hazardous chemicals, development projects subject to the proposed ordinance could require the use of toxic or hazardous chemicals, such as gasoline or diesel fuel, to operate construction equipment, and BESS facilities typically contain equipment that makes use of toxic or hazardous chemicals. As noted in section 7.a.5 of this checklist, the proposed ordinance may affect design decisions of BESS facilities that may alter the type, volume, or concentration of products used.

This topic is discussed in more detail in Section D of this checklist.

4) Describe special emergency services that might be required.

The proposed ordinance is a nonproject action that would not have any direct impacts, and, as BESS are already allowed in all zones as a subset of utility facilities, implementation of the proposed ordinance is not anticipated to generate any additional special emergency services for the development projects to which it would apply.

The state has adopted new requirements in the fire code, effective ~~October 29, 2023~~ **(This date is now estimated to be March 15, 2024, according to the State Building Code Council)**, that would require all BESS to have a fire safety plan, to include emergency response actions to be taken upon detection of a fire or possible fire involving lithium-ion or lithium metal battery storage. The 2021 International Building Code also contains a number of provisions relating to fire detection and suppression at BESS facilities; these are discussed in more detail in Part D.

5) Proposed measures to reduce or control environmental health hazards, if any:

The proposed ordinance is a nonproject action that would not have any direct impact on the environment nor create environmental health hazards. The proposed ordinance would require all privately owned BESS and consumer-scale BESS with over 1 MW capacity to obtain financial responsibility (e.g., insurance) to cover for the maximum damages that might occur from an explosion resulting from a worst-case release, as defined in the 40 C.F.R. Sec. 68.3, of flammable gases and flammable liquids. This process may disincentivize the development of BESS facilities in some instances, reducing the risk of fires and explosions if such facilities are not constructed. This analysis may alternatively lead to design modifications that reduce explosion impacts or potential, such as:

- Altering site layout to reduce concentration of batteries or groups of batteries; and
- Adding fire and explosion safety measures to BESS facilities beyond what is required by law.

The proposed ordinance also requires that applicants provide a decommissioning plan for facility closure detailing the hazardous substances that will be handled or generated in the facility; the range of potential release volumes that could require cleanup; and whether such releases have the potential to contaminate groundwater or surface waters on or adjacent to the site. Such a plan may also result in decisions to reduce potential hazardous chemicals used at a facility.

Additionally, having financial coverage in case of these events would help to ensure that any contamination is promptly addressed.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

The proposed ordinance is a nonproject action with no specific site or location that can be evaluated for existing noise levels. Various types of noise exist in the areas where the proposed ordinance could apply, including noise from traffic, operation of equipment, and more. These noise sources are not anticipated to affect implementation of the proposed ordinance.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

The proposed ordinance is a nonproject action that would not have any direct noise impacts. The construction and operation of BESS facilities would create noise, though the volume of noise is not expected to be greater as a result of implementing the proposed ordinance, as BESS are already allowed under the existing code as a subset of utility facilities. As under current code, any such development would be subject to existing regulations governing noise sources and levels and would be evaluated during project-level environmental and permit reviews.

Noise impacts are discussed in more detail in Part D of this checklist.

3) Proposed measures to reduce or control noise impacts, if any:

The proposed ordinance is a nonproject action that would not have any direct noise impacts. However, some proposed ordinance sections provide additional permitting requirements, which could result in indirect noise reduction benefits; these measures are discussed in more detail in Part D of this checklist.

8. Land and Shoreline Use [\[help\]](#)

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The proposed ordinance is a nonproject action with no specific site or location and would not have any direct impacts on the current land uses on nearby or adjacent properties. As a whole, unincorporated King County is predominantly forestland to the east and predominantly rural to the west, adjacent to more urban incorporated areas of the county, with agricultural areas between. The proposed ordinance would not change or impact current land use designations or zoning classifications in unincorporated King County.

Being a subset of utility facilities under the current code, BESS are a permitted use in all zones without specific conditions or limitations. The proposed ordinance would continue to allow BESS in all zones, but on R-zoned properties, a conditional use permit would be required. In the A and F zones, the proposed ordinance would limit the size of BESS to 2 acres, or 2.5% of the site, whichever is less. These additional requirements might slow or discourage the placement of BESS in these zones.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

The proposed ordinance is a nonproject action with no specific site or location and would not have any direct impacts to working farmlands or forestlands. Some sites where a development project is proposed that would be subject to the proposed ordinance could have been or may currently be used as working farmland or forestlands. However, existing regulatory limitations on properties enrolled in the Farmland Preservation Program, within the Agricultural Production District or Forest Production District, or in Agricultural (A) or Forestry (F) zones would continue to apply to development projects that would be subject to the proposed ordinance.

Additionally, the proposed ordinance would limit the size of BESS on A or F zoned properties to 2 acres, or 2.5% of the site, whichever is less. This would provide greater protection of Agriculture- and Forestry-zoned lands from conversion for BESS projects than exists for utility facilities under the current code.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

The proposed ordinance is a nonproject action that would not directly affect or be affected by the normal business operations of working farmland or forestland. BESS are generally unstaffed facilities and would be required to maintain standard setbacks for the zone in which they are located. They are unlikely to affect or be affected by the normal business operations of surrounding working farm or forest land.

c. Describe any structures on the site.

Although the proposed ordinance is a nonproject action with no specific site or location, various structures are located on parcels within unincorporated King County, where the proposed ordinance would apply.

d. Will any structures be demolished? If so, what?

Although the proposed ordinance is a nonproject action that would not directly result in any demolition, existing structures could be demolished as part of a development project that would be subject to the proposed ordinance. The nature of and extent to which those structures could be demolished is unknown at this time and would be subject to all existing applicable regulations.

e. What is the current zoning classification of the site?

The proposed ordinance is a nonproject action with no specific site or location; development projects subject to the proposed ordinance could occur in any zoning classification.

f. What is the current comprehensive plan designation of the site?

The proposed ordinance is a nonproject action with no specific site or location; development projects subject to the proposed ordinance would occur in any land use designation that allows the construction of buildings.

g. If applicable, what is the current shoreline master program designation of the site?

Although the proposed ordinance is a nonproject action with no specific site or location, unincorporated King County includes a variety of shoreline master program designations. Individual development projects subject to the proposed ordinance that occurs within or proximate to the County's shoreline jurisdiction would need to comply with the County's shoreline master program.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Although the proposed ordinance is a nonproject action with no specific site or location, portions of unincorporated King County are classified as critical areas where a development project could be proposed that would be subject to the proposed ordinance. Specifically, King County Code designates the following as critical areas: coal mine hazard areas, erosion hazard areas, flood hazard areas, coastal high hazard areas, channel migration zones, landslide hazard areas, seismic hazard areas, volcanic hazard areas, steep slope hazard areas, critical aquifer recharge areas, wetlands and wetland buffers, aquatic areas, and wildlife habitat networks and conservation areas.

i. Approximately how many people would reside or work in the completed project?

The proposed ordinance is a nonproject action that would not directly result in a completed project where people would reside or work. BESS facilities are generally unstaffed and therefore would not likely be the full-time work site of any person. Maintenance crews would visit BESS sites occasionally for maintenance work.

j. Approximately how many people would the completed project displace?

Although the proposed ordinance is a nonproject action and would not directly result in any displacement, it is possible that development projects subject to the proposed ordinance could result in displacement. However, implementation of the proposed ordinance is not anticipated to affect the likelihood of displacement under current King County Code.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Because the proposal is not anticipated to affect the likelihood of displacement under King County Code, no measures to avoid or reduce displacement impacts are proposed. King County projects would be subject to existing policies and regulations governing displacements and relocations and would be evaluated during project-level environmental and permit reviews.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposed ordinance was drafted to be compatible with existing and projected land uses and plans. For example, as compared to the current code for utility facilities, of which BESS are currently considered a subset, the proposed ordinance would:

- Require a conditional use permit in R-zones, which requires findings that the project is compatible with its surroundings and does not conflict with other uses, health, or safety;

- Limit the size of BESS in A and F zones;
- Require BESS to meet the same standards as other nonresidential uses when located in the RA, UR, or R zones; and
- Maintain landscaping requirements for street frontages and interior lot lines.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

The proposed ordinance is a nonproject action and would not directly impact agricultural and forest lands of long-term commercial significance. The proposed ordinance includes additional limits on the use of agricultural and forest lands for BESS as compared with the current code by limiting the size of BESS in the A and F zones to 2 acres, or 2.5% of the site, whichever is less.

9. Housing [\[help\]](#)

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Although the proposed ordinance is a nonproject action that will not have direct impacts to housing, the development of a project that would be subject to the proposed ordinance would not result in any additional units of housing above what might occur under existing code.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Neither the proposed ordinance itself nor the development allowed under the ordinance would result in any greater elimination of housing than what might occur if the ordinance were not adopted.

c. Proposed measures to reduce or control housing impacts, if any:

No measures to reduce or control housing impacts are proposed. Consumer-scale BESS would be considered a permitted residential accessory use and could be installed accessory to a residence without additional conditions.

10. Aesthetics [\[help\]](#)

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The proposed ordinance is a nonproject action that does not directly involve the construction of any structures, and does not regulate or change the height requirements of any structures or principal exterior building materials. BESS are frequently, but not always, placed inside shipping or storage containers. Shipping containers are generally less than ten feet high. The height and any exterior building material of any development project subject to the proposed ordinance will be subject to existing regulations.

b. What views in the immediate vicinity would be altered or obstructed?

The proposed ordinance is a nonproject action that would not have any direct impacts to views. Any development projects subject to the proposed ordinance would not result in the alteration or obstruction of any views to a greater degree than any other development allowed under existing regulations.

c. Proposed measures to reduce or control aesthetic impacts, if any:

The proposed ordinance is a nonproject action that would not have any direct impacts to views or aesthetics, and as such, no measures are proposed to reduce or control aesthetic impacts.

11. Light and Glare [\[help\]](#)

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The proposed ordinance is a nonproject action that would not directly cause any light or glare. BESS are not expected to be significant sources of light or glare. BESS facilities may have safety lighting, status indicator lights or panel displays, and outdoor security lighting. These could be illuminated at all times of day.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

The proposed ordinance is a nonproject action that would not have any direct impacts. Development projects subject to the proposed ordinance would have stricter light and glare requirements than under the current code. Any glare from BESS is not anticipated to be a safety hazard or interfere with views.

c. What existing off-site sources of light or glare may affect your proposal?

The proposed ordinance is a nonproject action with no specific site or location. Various off-site sources of light or glare exist throughout unincorporated King County. It is unlikely that any development projects subject to the proposed ordinance would be impacted by any off-site sources.

d. Proposed measures to reduce or control light and glare impacts, if any:

The proposed ordinance is a nonproject action that would not have any direct light and glare impacts. Development projects subject to the proposed ordinance would need to comply with lighting standards that include general lighting design, lighting along the portions of development adjacent to streets, and lighting in parking lots. Additionally, the proposed ordinance would require BESS to comply with requirements for nonresidential land uses in the RA, UR, or R zones, which includes a requirement that building illumination and lighted signs be designed so that no direct rays of light are projected into neighboring residences or onto any street right-of-way. This is not a requirement for utility facilities, of which BESS are currently considered a subset.

12. Recreation [\[help\]](#)

a. What designated and informal recreational opportunities are in the immediate vicinity?

The proposed ordinance is a nonproject action with no specific site or location. A variety of designated and informal recreational opportunities exist in unincorporated King County where the proposed ordinance would apply.

d. Would the proposed project displace any existing recreational uses? If so, describe.

The proposed ordinance is a nonproject action that would not directly displace any existing recreational uses. The ordinance would not result in a greater displacement of recreational uses than what may otherwise occur under current code.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

The proposed ordinance is a nonproject action that would not have any direct impacts to recreation; no measures to reduce or control impacts on recreation are proposed.

13. Historic and cultural preservation [\[help\]](#)

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.**

The proposed ordinance is a nonproject action with no specific site or location. A variety of buildings, structures and sites within unincorporated King County are listed or eligible for listing in national, state, or local preservation registers, and are potentially on sites where development projects could be proposed that are subject to the proposed ordinance. Such developments would be required to comply with all federal, state, and local regulations related to historic and cultural resources.

- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.**

The proposed ordinance is a nonproject action with no specific site or location. However, landmarks, features, and other evidence of Indian or historic use or occupation exist throughout unincorporated King County, and potentially on sites where development projects could be proposed that are subject to the proposed ordinance. Such projects would continue to be required to comply with federal, state, and local rules related to historic and cultural resources.

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.**

The proposed ordinance is a nonproject action that will not have any direct impacts to historic and cultural resources. King County's existing regulations related to cultural and historic resources would apply to any proposed development projects subject to the proposed ordinance. Such requirements could include consultation with tribes and associated agencies as well as use of archaeological surveys, GIS data, and historic maps to assess potential impacts to cultural and historic resources if needed. The Muckleshoot, Puyallup, Samish, Snoqualmie, Squaxin, Stillaguamish, Suquamish, and Tulalip tribes are regularly notified during the County's SEPA process for proposed development projects, and affected tribes receive notice when the County receives an application for a Type 2, 3, or 4 project, or for a Type 1 project subject to SEPA.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.**

The proposed ordinance is a nonproject action that will not have any direct impacts to cultural or historic resources. However, King County's existing regulations related to avoidance, minimization of, or compensation for loss, changes to, and disturbances to cultural and historic resources would apply to any individual development proposals subject to the proposed ordinance.

14. Transportation [\[help\]](#)

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.**

The proposed ordinance is a nonproject action with no specific site or location. The proposed ordinance would apply to development project sites that are served by a variety of public streets and highways.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?**

The proposed ordinance is a nonproject action with no specific site or location. However, unincorporated King County is generally served by public transit. It is unknown how far the nearest transit stop would be for any future development proposals subject to the proposed ordinance.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

The proposed ordinance is a nonproject action with no specific site or location. Implementation of the proposed ordinance would not affect the number of parking spaces provided by development projects subject to the proposed ordinance. As BESS facilities are generally unstaffed, they typically do not require a large number of parking spaces.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The proposed ordinance is a nonproject action that would not directly involve any roadway, bicycle, or pedestrian improvements and, when applied to individual development projects, is not anticipated to affect any required or proposed improvements to existing roads, streets, or pedestrian or bicycle transportation facilities.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The proposed ordinance a nonproject action that would not have any direct impacts to transportation facilities. However, individual development projects subject to the proposed ordinance may use or occur proximal to water, rail and air transportation.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

The proposed ordinance is a nonproject action that would not directly generate any vehicular trips. Development projects subject to the proposed ordinance would likely generate vehicular trips, though the volume of those vehicle trips is unlikely to be greater as a result of implementing the proposed ordinance. As noted above, BESS are generally unstaffed facilities and only have personnel on site for maintenance or monitoring activities.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

Although the proposed ordinance would not have any direct impact on the movement of agricultural and forest products on roads or streets on the area, individual development projects allowed under the ordinance could generate some additional traffic that could interfere with, affect, or be affected by the movement of agricultural and forest products. As generally unstaffed facilities, any impacts would likely be minimal.

h. Proposed measures to reduce or control transportation impacts, if any:

The proposed ordinance is a nonproject action that would not have any direct impacts to transportation volumes. Whereas currently, as a subset of utility facilities, BESS are exempt from the requirements of K.C.C. 21A.12.220, the proposed ordinance would make them subject to this section, including the requirement that Sites abut or be accessible from at least one public street functioning at a level consistent with King County Road Design Standards.

15. Public Services [\[help\]](#)

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

The proposed ordinance is a nonproject action that would not directly result in an increased need for public services. Public services would not be needed in the ordinary operation of BESS facilities, but emergency services, such as fire, police, and hazmat teams, would need to be available for BESS allowed under this ordinance, at a similar level to what is currently required for BESS currently as a subset of utility facilities.

b. Proposed measures to reduce or control direct impacts on public services, if any.

As discussed in other sections of this checklist, lithium-ion batteries in BESS facilities have been known to catch fire or explode. These incidents would require response from emergency services, such as fire, police, and hazmat. The state has adopted new requirements in the fire code, effective October 29, 2023, that would require all BESS to have a fire safety plan, to include emergency response actions to be taken upon detection of a fire or possible fire involving lithium-ion or lithium metal battery storage. The new state law and 2021 International Building Code also include provisions for fire detection and suppression, as well as for explosion control.

Additionally, the proposed ordinance requires BESS to have a decommissioning plan and financial responsibility for cleanup of any hazardous materials on site. Prompt cleanup of any hazardous materials onsite could reduce healthcare needs due to exposure to these materials if they were left on site after closure.

16. Utilities [\[help\]](#)

a. Circle utilities currently available at the site:

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system,
other _____

The proposed ordinance is a nonproject action with no specific site or location. A variety of utilities are generally available in unincorporated King County depending on the service area of specific utility providers. Municipal sanitary sewer is not likely to be available in most rural and agricultural areas in unincorporated King County, with notable exceptions for the Vashon and Snoqualmie Pass Rural Towns, which do have sanitary sewer service.

i. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The proposed ordinance is a nonproject action that would not have any direct connection to utilities, and is not directly connected to a development site on which general construction activities would occur. BESS facilities are themselves part of the electrical grid, storing electricity anywhere between the generation facility and the end user. Consumer-scale BESS may be connected to on-site power generation or the electrical grid, or both.

Other utilities such as water might be present on BESS sites for the purposes of cooling, emergency response, or use by staff who may visit the site intermittently.

D. Supplemental sheet for nonproject actions [\[HELP\]](#)

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Production, Storage, or Release of Toxic or Hazardous Substances, and Associated Discharge to Air or Water

The batteries used in BESS are lithium-ion, lead–acid, nickel-metalhydride, nickel-cadmium, sodium-sulfur, sodium–nickel chloride, and flow batteries, though lithium-ion batteries are most commonly used, due to their power density, performance, energy efficiency and economical aspects.^{2,3}

A 2023 study is quoted here at length:

“A lithium ion battery cell is a type of rechargeable electro-chemical battery in which lithium ions move between the negative electrode through an electrolyte to the positive electrode and vice versa. Lithium-ion battery cells are a family of cells that consist of an anode (negative terminal) and a variety of different types of cathodes (positive terminal) and electrolytes. The anode and cathode serve as host for lithium ions. Lithium ions move from the anode to the cathode during discharge and are intercalated into the cathode (i.e., inserted into voids within the crystallographic structure). The ions reverse direction during charging.

“According to recent lessons learned on BESS fire prevention and mitigation published by the Electrical Power Research Institute (EPRI) in June 2021, over 30 large-scale BESS globally experienced failures that resulted in destructive fires over the past four years (Long, 2021). These events are also tracked in the publicly accessible BESS Failure Event Database (EPRI, 2022). Most events had in common that the lithium ion batteries installed in the BESS were somehow driven to vent battery gas and transition to thermal runaway, which is a process that releases large amounts of energy. Thermal runaway is strongly associated with exothermic chemical reactions. Under a variety of scenarios (i.e., short circuit), the stored chemical energy is converted to thermal energy. The typical consequence is cell rupture and the release of large amounts of flammable and potentially toxic gases, which can lead to fire and explosion.”⁴

Another study found:

“When a large BESS experiences an off-nominal condition, the location in which it is placed must be fully assessed. Release of flammable gases from batteries carries a risk of explosions in BESSs. Immediate ignition of flammable vent gases after release may cause a minor deflagration, whereas a longer accumulation of a large volume of gases and subsequent ignition may cause a large explosion in BESS...combustible gases...need to be assessed for toxicity, as personnel walking into the location can be affected adversely if the volume of toxic gases released is not well known and they are not prepared with the appropriate personal protective equipment (PPE). The worst-case volume

² <https://pubs.acs.org/doi/epdf/10.1021/acseenergylett.2c01400>

³ <https://www.sciencedirect.com/science/article/abs/pii/S095042302200208X>

⁴ Ibid.

of gases released per unit volume under an off-nominal condition should be well assessed in order to provide mitigation strategies for safe handling of an off-nominal event by first responders and fire fighters.”⁵

A 2016 study found more than one hundred gaseous products were emitted during failure of a lithium-ion battery, and that most of these were toxic. The flammable and toxic gaseous mixture included H₂, CO, CO₂, CH₄, C₂H₄, C₂H₆, C₃H₈, HF, POF₃, PF₅, ethyl fluoride, propylene and others.⁶

As noted above, a BESS fire typically begins with the failure of a single battery cell. The heat from this failure can cause the failure to spread to adjacent cells, compounding the effect. Therefore, extinguishing the fire in the first cell is important to prevent the reaction from spreading. However, a 2016 study found that some of the hazardous substances emitting from a failed battery get oxidized into harmless reaction products when ignited, and if the ignition of the cell is prevented, the gas emission is more dangerous. The study therefore recommended that both fire suppression and gas filtration technologies be employed in BESS to mitigate both potential impacts.⁷ As suggested by the quote above, the greatest danger from toxic gases is to personnel walking into the facility, such as first responders and firefighters. With greater distance from the BESS, gases would be less concentrated and pose less threat to humans and wildlife.

While the literature reviewed for this checklist focuses on emissions to air as the primary hazardous substances concern with BESS, it is possible that, during a failure event, the electrolyte mixture in a lithium-ion battery could be discharged in a liquid form, which could conceivably contaminate soil or water. This might be more likely to occur with other, non-lithium ion types of batteries, for which the 2021 International Building Code requires spill control and neutralization technology. Additionally, soil or water contamination could occur when water from fire-fighting activities comes in contact with burning materials from a BESS fire. However, as use of water directly on a BESS fire is not recommended, this may be less of a concern than for fires at other residential or commercial facilities where large quantities of water would come in direct contact with burning materials.

While there is potential for discharge of hazardous materials to air and water from the failure of a BESS, as discussed above, this is not the case during normal operation. BESS systems are frequently cited as a means to achieve greater use of renewable energy, as discussed in Section D.3. and elsewhere in this checklist. If BESS make renewable energy generation systems more feasible, therefore reducing the dependence on fossil fuel-based energy, this could serve to reduce the toxic and greenhouse gas emissions that are part of the normal operation of fossil fuel-based energy generation.

Production of Noise

BESS facilities generate noise during operation, primarily from power inverters, transformers, and HVAC systems. This noise can be characterized as a mechanical hum.

Two noise studies for BESS projects were used during preparation of this environmental checklist, one in San Diego County, CA⁸ and one in Imperial County, CA,⁹ which dealt with 40 MW and 125 MW BESS projects, respectively. In the former project, BESS were housed in storage containers, whereas in the latter project, BESS were inside of buildings. In both cases, sound from the BESS' HVAC system was found to be the loudest component, with noise levels immediately next to the system ranging from 85-87 dBA. HVAC systems for BESS are similar to those used in a wide range of commercial applications allowed in unincorporated King County.

⁵ <https://pubs.acs.org/doi/epdf/10.1021/acsenergylett.2c01400>

⁶ <https://doi.org/10.1016/j.nanoen.2016.06.031>

⁷ <https://doi.org/10.3390/batteries2010005>

⁸ <https://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/FallbrookBatteryEnergyStorage/Noise%20Assessment.pdf>

⁹ <https://www.icpds.com/assets/planning/draft-environmental-impact-reports/supplemental-le-conte-battery-energy-storage-system-deir/le-conte-battery-energy-storage-system-app-f.pdf>

Under current code and under the proposed ordinance, BESS are subject to the County's noise regulations in K.C.C. 12.86 and would be required to ensure that noise levels do not exceed the maximums prescribed in K.C.C. 12.86.110. and 12.86.120. If a BESS was integrated with an electrical substation on the same site, it is possible the BESS would be exempt from the nighttime sound restrictions of K.C.C. 12.85.120.A., as substations are exempt from those restrictions.

Proposed measures to avoid or reduce such increases are:

Toxic and Hazards Substances and Discharge to Air or Water

The proposed ordinance would clarify and add regulations around BESS facilities, which are already allowed in all zones in unincorporated King County as a subset of utility facility. The additional regulations could discourage or slow development of BESS, or the increased clarity in code could encourage development of BESS, or these factors could have no effect on the likelihood of BESS development.

If the combination of these factors discourages the development of BESS, this in itself would reduce the potential impact of fire and subsequent release at a BESS facility, but could likewise slow the transition to renewable energy and thus prolong the County's use of fossil fuel-based energy, which emits toxic substances and greenhouse gases as part of energy generation.

The proposed ordinance also contains provisions addressing fire and explosion, and subsequent contamination, at a BESS facility. Namely, the proposed ordinance requires privately owned BESS and Consumer-scale BESS with 1 MW or more of capacity to obtain financial responsibility (e.g., insurance) to cover for the maximum damages that might occur from an explosion resulting from a worst-case release, as defined in the 40 C.F.R. Sec. 68.3, of flammable gases and flammable liquids. This analysis may lead to design modifications that reduce explosion impacts or potential, such as:

- Altering site layout to reduce concentration of batteries or groups of batteries; and
- Adding fire and explosion safety measures to BESS facilities beyond what is required by law.

The proposed ordinance also requires that applicants provide a decommissioning plan for facility closure detailing the hazardous substances that will be handled or generated in the facility; the range of potential release volumes that could require cleanup; and whether such releases have the potential to contaminate groundwater or surface waters on or adjacent to the site. Such a plan may also result in decisions to reduce potential hazardous chemicals used at a facility.

Additionally, having financial coverage in case of these events would help to ensure that any environmental damage or contamination is promptly addressed.

The proposed ordinance also requires vehicle barriers between BESS and areas that are accessible to vehicles, increased setbacks, and a ten-foot unvegetated buffer around structures containing BESS. These measures are all intended to either decrease the likelihood of a fire and subsequent release of gas, or to minimize the effect of such an occurrence on surrounding properties.

In addition to the specific safety measures in the proposed ordinance, the 2021 International Building Code, and amendments thereto adopted by the State, include a number of specific provisions relating to energy storage systems. These include permit requirements, hazard mitigation analyses, pre-approval equipment testing and documentation, a two-hour fire-resistant wall in structures containing BESS, a hazardous exhaust system, maximum allowable quantities of batteries in a single area, explosion, spill, and thermal runaway controls, and other requirements. These measures are all aimed at mitigating the possibility of fire and/or subsequent release of hazardous materials. Additionally, unless exempted by state or local law, individual BESS projects would be subject to the SEPA process, through which mitigation measures could be imposed.

Noise

The proposed ordinance would clarify and add regulations around BESS facilities, which are already allowed in all zones in unincorporated King County as a subset of utility facility. BESS facilities permitted under the proposed ordinance would not generate more sound than BESS allowed under the existing code, and would be subject to the same noise regulations.

The proposed ordinance would require a conditional use permit for BESS in R zones where they are currently permitted outright. R zones are among the most densely developed areas in unincorporated King County. The conditional use permit process requires that the department find that the proposal is not in conflict with the health and safety of the community, that impacts will be mitigated in a manner equal to the general standards of the zoning code, and that the project is compatible with the surrounding area in other ways. Conditions imposed through this process could include noise mitigation measures. Additionally, unless exempted by state or local law, individual BESS projects would be subject to the SEPA process, through which noise mitigation measures could be imposed.

Whereas currently, as a subset of utility facilities, BESS are exempt from the standards for nonresidential land uses in the RA, UR, and R zones, BESS would be subject to these standards under the proposed ordinance. Therefore, BESS located in these zones would be subject to a 30-foot setback from interior property lines, as opposed to 5 or 10 feet currently. This additional distance between BESS and neighboring properties could serve to reduce noise at the property line even further than required by code.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

There are numerous plants, animals, fish, and marine life within unincorporated King County, but the proposed ordinance is unlikely to result in activities that would cause a greater impact to these resources than might otherwise occur under the current code because the regulations protecting those resources are not changed by the proposed ordinance.

As discussed in Section 1 of Part D, BESS facilities have the potential to catch fire or explode, releasing hazardous materials during such incidents. These incidents could potentially have an impact on plants, animals, fish, or marine life under both the existing code and under the proposed ordinance.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

The proposed ordinance would require BESS facilities to demonstrate financial responsibility, e.g., insurance, to cover maximum damages from an explosion resulting from a worst-case release of hazardous materials, and would also require a decommissioning plan and financial responsibility for any cleanup of hazardous materials on the site when the facility is decommissioned. The proposed ordinance might reduce impacts to plants, animals, fish, or marine life compared to the existing code, by ensuring that BESS owners have the resources necessary to promptly address any environmental impacts to the site from fire or hazardous materials. Additionally, unless exempted by state or local law, individual BESS projects would be subject to the SEPA process, through which mitigation measures could be imposed.

3. How would the proposal be likely to deplete energy or natural resources?

BESS facilities are intended to store energy for later use, and therefore might help with energy conservation through the following means:

1. **Time-shifting Renewable Energy:** BESS can store excess energy generated from intermittent renewable sources, like solar and wind, during periods of low demand and release it when demand is higher. This time-shifting capability helps maximize the utilization of renewable energy.

2. **Peak Shaving:** BESS can discharge stored energy during periods of high electricity demand, often referred to as peak hours. By doing so, they reduce the need to draw power from fossil fuel-based peaking power plants or other conventional power sources during peak periods, promoting energy conservation and reducing greenhouse gas emissions.
3. **Grid Stabilization:** BESS can provide ancillary services to the grid, such as frequency regulation and voltage support. By quickly responding to fluctuations in demand and supply, BESS enhances grid stability and reduces the need for less-efficient and carbon-intensive backup power sources.
4. **Load Shifting and Demand Response:** BESS can be used in conjunction with demand response programs to shift energy consumption to off-peak hours. By storing electricity during low-demand periods and discharging it during high-demand periods, BESS can help manage grid load more efficiently and reduce the overall energy consumption during peak times.
5. **Microgrid Support:** In microgrid applications, BESS can help conserve energy by efficiently managing the integration of renewable energy sources, grid electricity, and distributed generation. The BESS acts as a buffer, optimizing energy use and reducing reliance on less efficient or polluting energy sources.
6. **Uninterruptible Power Supply (UPS):** BESS used as UPS in critical infrastructure can provide backup power during grid outages. This ensures continuous power supply and avoids the need for backup generators running on fossil fuels, leading to energy conservation and minimizing environmental impacts.

The proposed ordinance adds clarity to how BESS are treated under the zoning code, providing predictability for applicants, but also imposes additional permitting requirements on BESS. It is unknown how the balance of these two factors will encourage or discourage development of BESS facilities in unincorporated King County. If these two factors balance to discourage or slow development of BESS, it is not expected to have a significant impact to energy or natural resources.

Proposed measures to protect or conserve energy and natural resources are:

Existing regulations that protect and conserve energy and natural resources would apply to development projects subject to the proposed ordinance. No additional measures to avoid or reduce such impacts are proposed.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

The proposed ordinance is unlikely to result in activities that would cause a greater impact to environmentally sensitive areas or areas designated as eligible or under study for governmental protection than might otherwise occur under the former code. Any facility developed under the proposed ordinance would be subject to the same development restrictions concerning environmentally sensitive areas as other allowable uses.

Proposed measures to protect such resources or to avoid or reduce impacts are:

Existing regulations that protect such resources would apply to development projects subject to the proposed ordinance and are not changed by the proposed ordinance. No additional measures to avoid or reduce such impacts are proposed.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

As noted previously, it is unknown whether the proposed ordinance would incentivize or disincentivize the development of BESS compared to the existing code, but either the absence or the development of such facilities remains compatible with existing land use plans.

Proposed measures to avoid or reduce shoreline and land use impacts are:

The proposed ordinance is intended to avoid land use impacts by clarifying and adding regulations for BESS facilities. BESS are considered to be a subset of utility facilities under the current code, and as such are a permitted use in all zones without conditions. The proposed ordinance would continue to allow BESS in all zones, but would:

- Require a conditional use permit in R-zones, which requires findings that the project is compatible with its surroundings and does not conflict with other uses, health, or safety;
- Limit the size of BESS in A and F zones;
- Require BESS to meet the same standards as other nonresidential uses when located in the RA, UR, or R zones; and
- Maintain landscaping requirements for street frontages and interior lot lines.

Additionally, unless exempted by state or local law, individual BESS projects would be subject to the SEPA process, through which mitigation measures could be imposed.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

The proposed ordinance is not anticipated to increase demand on public transportation or government-provided services. However, some demands related to utility-supplied electricity may shift if the clarified regulations lead to more BESS being developed. These potential impacts are addressed in the energy and natural resources section under Checklist section D.3.

Proposed measures to reduce or respond to such demand(s) are:

The proposed ordinance is not anticipated to increase demands on transportation or public services and facilities and therefore no measures are proposed.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

The proposed ordinance is consistent with local, state, and federal law requirements for the protection of the environment. Existing regulations related to the protection of the environment, including the County's Critical Areas Code, Shoreline Master Program, King County Code (particularly development regulations such as Title 9 Surface Water Management, Title 10 Solid Waste, Title 13 Water and Sewer Systems, Title 21A Zoning, and Title 23 Code Compliance), the Clean Air Act, the Clean Water Act, and others, are not amended by the proposed ordinance. These regulations would still apply to development projects subject to the proposed ordinance in unincorporated King County.